

WHAT IS CLAIMED IS:

- 1 1. A vessel comprising:
2 a center hull;
3 a first side hull coupled to a first side of the center hull;
4 a second side hull coupled to a second side of the center hull; and
5 at least one cross support coupling the first and second side hulls,
6 wherein the center hull is configured to be vertically translated with respect to
7 the first and second side hulls.
- 1 2. The vessel of claim 1, further comprising a ramp coupled to a first end
2 of the center hull.
- 1 3. The vessel of claim 2, further comprising another ramp coupled to a
2 second end of the center hull.
- 1 4. The vessel of claim 1, further comprising a lifting mechanism
2 configured to vertically translate the center hull with respect to the first and second side hulls.
- 1 5. The vessel of claim 4, wherein the lifting mechanism includes at least
2 one of a plurality of screw jacks, a plurality of chain jacks, wire rope and linear winches, a
3 plurality of rack and pinions, and a plurality of hydraulic actuators.
- 1 6. The vessel of claim 4, wherein the lifting mechanism includes a
2 plurality of hydraulic actuators coupled between the center hull and the first and second side
3 hulls.
- 1 7. The vessel of claim 6, wherein the hydraulic actuators are disposed in
2 the side hulls.
- 1 8. The vessel of claim 4, wherein the lifting mechanism includes a
2 plurality of ballast tanks disposed in the center hull and in the side hulls.
- 1 9. The vessel of claim 8, wherein the center hull is configured to be
2 vertically translated with respect to the first and second side hulls by selectively transferring
3 ballast water into or out of one or more of the ballast tanks.

1 10. The vessel of claim 8, wherein the center hull is configured to be tilted
2 by selectively transferring ballast water into or out of one or more of the ballast tanks.

1 11. The vessel of claim 1, wherein the side hulls are wing walls.

1 12. The vessel of claim 1, wherein the side hulls include a plurality of
2 guides, and the center hull includes a plurality of lifting blocks configured to engage the
3 guides to vertically guide the center hull during vertical translation thereof.

1 13. The vessel of claim 12, wherein the lifting blocks are coupled to the
2 lifting mechanism to vertically translate the center hull.

1 14. The vessel of claim 1, wherein a top deck of the center hull is
2 configured to be vertically translated below a surface of a body of water.

1 15. The vessel of claim 1, wherein the side hulls are configured to be lifted
2 above a surface of a body of water.

1 16. The vessel of claim 1, wherein the center hull is configured to be
2 vertically translated above a surface of a body of water, and the side hulls are configured to
3 be pushed into the water.

1 17. The vessel of claim 1, wherein the first and second side hulls are
2 coupled to the cross support at an upper portion of the side hulls.

1 18. The vessel of claim 1, wherein said center hull is slidably coupled to
2 the first and second side hulls.

1 19. The vessel of claim 1, wherein a draft of the first and second side hulls
2 increases when the center hull is translated upward.

1 20. The vessel of claim 1, wherein a draft of the first and second side hulls
2 decreases when the center hull translated downward.

1 21. The vessel of claim 1, wherein the side hulls are approximately
2 parallel.

1 22. The vessel of claim 1, wherein the first side hull includes one or more
2 struts coupled to one or more hulls, wherein the second side hull includes one or more struts
3 coupled to one or more hulls.

1 23. The vessel of claim 22, wherein the struts are vertically disposed.

1 24. The vessel of claim 22, wherein the struts are canted.

1 25. The vessel of claim 1, wherein the center hull, the first side hull, and
2 the second side hull form hulls of the vessel.

1 26. The vessel of claim 1, wherein the center hull is configured to be
2 vertically translated with respect to the first and second side hulls to change the draft of the
3 vessel.

1 27. The vessel of claim 1, wherein the center hull includes a top deck
2 configured to hold cargo and/or passengers.

1 28. A vessel comprising:
2 a center hull that includes a first plurality of ballast tanks;
3 a first side hull coupled to a first side of the center hull, the first side hull
4 including a second plurality of ballast tanks;
5 a second side hull coupled to a second side of the center hull, the second side
6 hull including a third plurality of ballast tanks; and
7 at least one cross support configured to couple the first and second side hulls,
8 wherein the center hull is configured to be vertically translated with respect to
9 the first and second side hulls by selectively transferring ballast water into or out of one or
10 more of the ballast tanks.

1 29. The vessel of claim 28, further comprising a first ramp coupled to a
2 first end of the center hull.

1 30. The vessel of claim 29, further comprising a second ramp coupled to a
2 second end of the center hull.

1 31. The vessel of claim 28, wherein the center hull is configured to be
2 vertically translated with respect to the first and second side hulls to change the draft of the
3 vessel.

1 32. The vessel of claim 28, wherein the side hulls are wing walls.

1 33. The vessel of claim 28, wherein a draft of the first and second side
2 hulls increases when the center hull is translated upward.

1 34. The vessel of claim 28, wherein a draft of the first and second side
2 hulls decreases when the center hull translated downward.

1 35. The vessel of claim 28, wherein the center hull is configured to be
2 vertically translated with respect to the first and second side hulls to change the draft of the
3 vessel.

1 36. A vessel comprising:
2 a central hull;
3 a plurality of struts coupled to the central hull, the struts extending downward
4 with respect to the central hull;
5 a plurality of pods coupled to the struts; and
6 a plurality of floatation devices slidably coupled to the struts, wherein a draft
7 of the pods is configured to be increased or decreased by vertically translating the floatation
8 devices.

1 37. The vessel of claim 36, wherein the plurality of pods includes at least a
2 first pod and a second pod.

1 38. The vessel of claim 37, wherein the plurality of floatation devices
2 includes at least a first floatation device and a second floatation device.

1 39. The vessel of claim 38, wherein the plurality of struts includes at least
2 a first forward strut, a second forward strut, a first aft strut, and a second aft strut.

1 40. The vessel of claim 39, wherein the first forward strut and the first aft
2 strut are coupled to a first side of the central hull, and the second forward strut and the second
3 aft strut are coupled to second side of the central hull.

1 41. The vessel of claim 40, wherein the first pod is slidably coupled to the
2 first forward strut and the first aft strut, and the second pod is slidably coupled to the second
3 forward strut and the second aft strut.

1 42. The vessel of claim 36, wherein the plurality of floatation devices
2 includes a number of floatation devices corresponding to a number of struts included in the
3 plurality of struts.

1 43. The vessel of claim 42, wherein one or more of the floatation devices
2 are configured to be vertically translated to tilt the vessel.